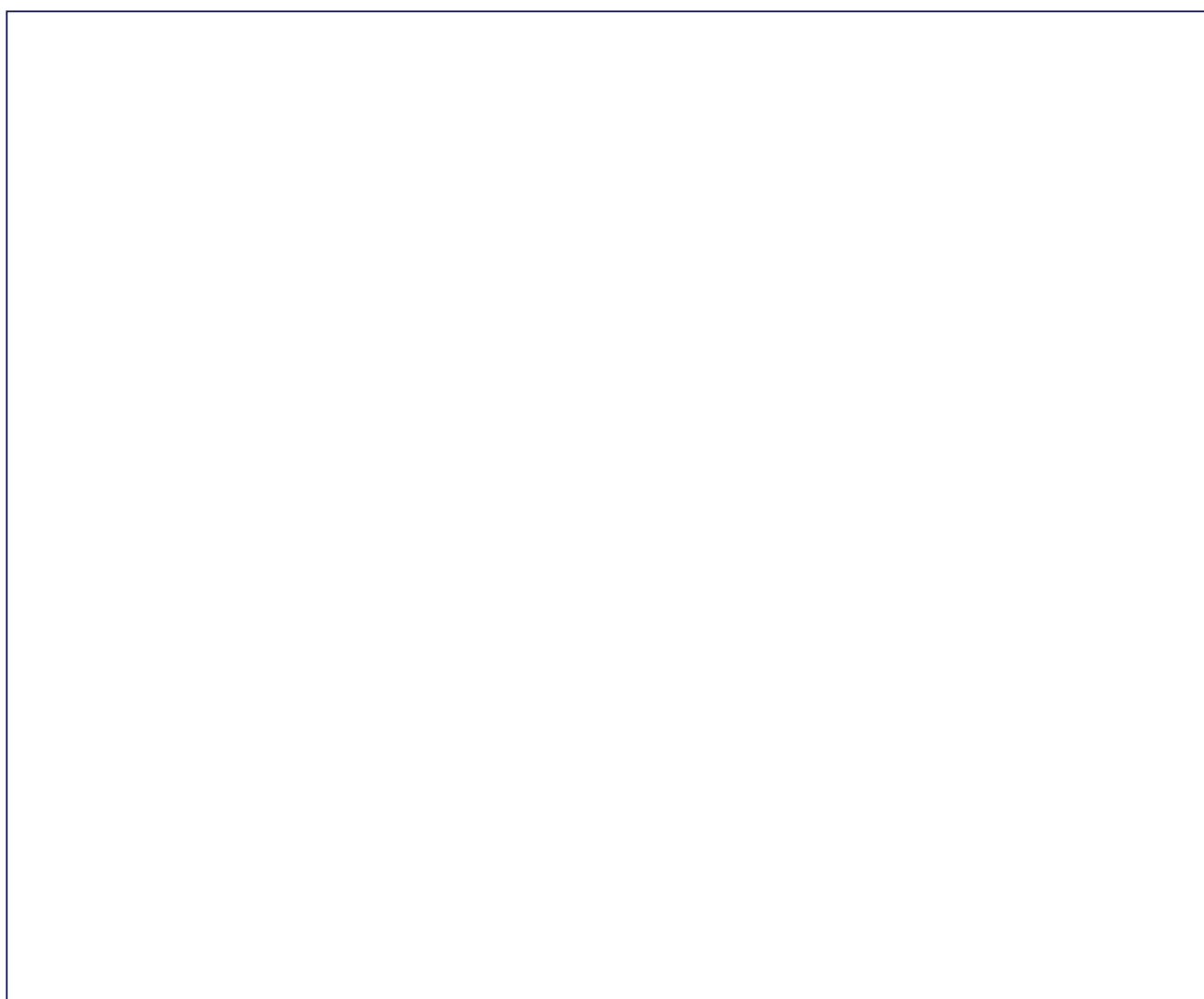


Kit's Computing Challenge: Designing an Algorithm

Learning objective: To design a simple algorithm using flowcharts and sequence to solve a real-world problem.

Follow the steps below to design a flowchart for a robot that helps Kit the fox organise his library of books. Use standard flowchart symbols: ovals for start/end, rectangles for actions, and diamonds for decisions.

Draw: Draw a clear, step-by-step flowchart for Kit the fox's sorting robot. Start with an oval 'Start' box at the top. Use arrows to connect to a rectangle box: 'Pick up a book'. Next, draw a diamond shape with the question 'Is it a story?'. From the diamond, draw two paths: one labelled 'Yes' leading to a rectangle 'Place in Fiction pile', and one labelled 'No' leading to a rectangle 'Place in Non-Fiction pile'. Finally, draw arrows pointing back to the start to create a loop, ending with an 'End' box.



Label words: Start · End · Input · Process · Decision · Algorithm · Sequence · Loop

Steps:

1. Explain why it is important to include a 'Start' and 'End' point in your flowchart.
2. What shape would you use in your drawing to show a 'Decision', such as asking 'Is the book a story?'?
3. If Kit has 50 books to sort, why is a 'Loop' more efficient than writing a separate instruction for every single book?

4. Label your drawing to show the 'Input' (the book) and the 'Output' (the correct pile).
5. If the robot encounters a book that is not a story or information, what 'error' check might you add to your flowchart?